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Summit National Site
Deerfield, Ohio

I. Introduction

This Preliminary Close Out Report documents that the U.S. Environmental Protection Agency (U.S. EPA) completed all construction activities for the Summit National site in accordance with Procedures for Completion and Deletion of National Priorities List Sites and Update (OSWER Directive 9320.2-3C). U.S. EPA and the Ohio EPA conducted a pre-final inspection on July 28, 1995, and determined that the Potentially Responsible Parties (PRPs) constructed the remedy in accordance with the Remedial Design (RD) plans and specifications. The PRPs have initiated activities necessary to achieve performance standards and site completion.

II. Summary of Site Conditions

Background

The Summit National site, a former liquid waste disposal facility, is located on an abandoned coal strip mine at the intersection of Ohio Route 225 and U.S. Route 224 in Deerfield, Ohio; 20 miles west of Youngstown, and 45 miles southeast of Cleveland. The 11.5 - acre fenced site contained two ponds, an inactive incinerator, and several vacant buildings. Immediately surrounding the site are several rural residences, two landfills, light industries and farmland.

From 1973 to 1978, Summit National accepted liquid wastes including oil, resins, sludge, pesticide wastes and plating wastes in drums and tank trucks. These wastes were stored, incinerated, buried or dumped at the site. In June of 1978, Ohio EPA ordered Summit National to stop receiving waste and to remove all liquid waste stored at the site, and in 1979 filed a complaint against the operations for failing to comply with State regulations regarding the handling of Solid and liquid wastes.

Ohio's sampling of on-site soils and surface water indicated the presence of hazardous substances potentially harmful to public health and the environment. In 1980, Ohio EPA constructed a fence around the site, installed a drainage system to control surface water flow onto and off the site and six ground water monitoring wells. The same year, under authority granted in Section 311 of the Clean Water Act, U.S. EPA removed three liquid storage tanks and their contents and some contaminated surface soils from the site. In 1981, an agreement between Ohio and eight of the Potentially Responsible Parties resulted in a $2.5 million surface cleanup which removed drums, tanks, surface debris and a small amount of contaminated soil from the site. In 1983, U.S. EPA placed the site on the National Priorities List, a federal roster of the nation's uncontrolled or abandoned hazardous waste sites eligible for cleanup under the Superfund

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program. From 1984 through 1987, U.S. EPA conducted a Remedial Investigation.

The Remedial Investigation confirmed the presence of contamination on-site in the groundwater, soils, pond sediments and surface water. In addition to on-site contamination, property outside the site perimeters was also found to be contaminated. A variety of organic and inorganic compounds was detected that could potentially threaten human health through direct contact with sediments and soils or ingestion of the groundwater.

Remedial Construction Activities

A ROD was signed in June of 1988 specifying the Remedial Action selected for the site. The ROD was amended on November 2, 1990.

The Remedial Action Specified in the ROD as amended is:

1. Expanding site boundaries to include contaminated areas along the perimeters and the south drainage ditch and constructing an 8-foot chain link fence around this expanded boundary.

2. Excavating and incinerating (in an on-site facility) soils and sediments as follows:

Contaminated soils on-site:	24,000 c.y.
Contaminated perimeter sediments: (including drainage ditches)	4,000 c.y.
Contents of buried drums	900-1600 drums

3. Dismantling and/or demolishing all on-site structures for on-site disposal.

4. Collecting and treating surface water from two on-site ponds and drainage ditches. Sediments would be excavated after ponds and ditches are dewatered.

5. Extracting groundwater for treatment from the various levels of the water table on-site by two basic components:

   a. A pipe and media drain system along the southern boundary and lower portions of the eastern and western boundaries to extract and treat contaminated groundwater.

   b. Additional extraction wells installed in the intermediate unit to augment the pipe and media drain system.

   All water extracted will be treated by a system to be enclosed in an on-site building.

6. Relocating or removing one vacant residence.

7. Ash from incinerated waste material would be tested to ensure it conforms with U.S. EPA and Ohio EPA standards and used as fill to regrade the site before the final cover is placed over the surface. If the ash fails the test it would either be placed in an on-site RCRA facility or sent to an off-site RCRA landfill.

8. Regrading the site and installing a soil cover over approximately 10.6 acres of site. This cover will consist of an 18-inch layer of loam and 6 inches of topsoil with gas vents installed for treating and monitoring potential air emissions.

9. Rerouting south and east drainage ditches to uncontaminated areas beyond the site.

The Statement of Work (SOW) specified that groundwater extraction and treatment would continue until a 10^{-6} risk level was achieved.

In a consent decree signed with U.S. EPA and OEPA, the PRPs agreed to perform the remedial design/remedial action (RD/RA). The RD was conducted in conformance with the approved ROD. The RA was initiated on June 22, 1993. The contractor conducted remedial activities as planned, and no additional areas of contamination were identified. U.S. EPA and the State conducted a pre-final inspection on July 28, 1995, which included a description and schedule for correcting construction items by the contractor. U.S. EPA and the State determined that the following RA activities were completed according to the ROD and design specifications:

1. Expanding site boundaries to include contaminated areas along the perimeters and the south drainage ditch and constructing an 7-foot chain link fence around this expanded boundary. The existing fence was 7 feet and was matched for the rest of the site.

2. Excavating and incinerating (in an on-site facility) soils and sediments as follow:

Contaminated soils on-site:	24,000 c.y.
Contaminated perimeter sediments: (including drainage ditches)	4,000 c.y.

3. Dismantling and/or demolishing all on-site structures for on-site disposal.

4. Collecting and treating surface water from two on-site ponds and drainage ditches. Sediments were excavated after ponds and ditches were dewatered.

5. Extracting groundwater for treatment from the various levels of the water table on-site by two basic components:

   a. A pipe and media drain system along the southern boundary and lower portions of the eastern and western boundaries to extract and treat contaminated groundwater.

   b. Additional extraction wells installed in the intermediate unit to augment the pipe and media drain system. These wells were abandoned or converted to monitoring wells due to the low permeability of this unit.

   All water extracted will be treated by a system to be enclosed in an on-site building.

6. Removed one vacant residence.

7. Ash from incinerated waste material was tested to ensure it conformed with U.S. EPA and Ohio EPA standards and was used as fill to regrade the site before the final cover was placed over the surface.

8. Regrading the site and installing a soil cover over approximately 10.6 acres of site. This cover consists of an 18-inch layer of loam and 6 inches of topsoil with gas vents installed for treating and monitoring potential air emissions.

9. Rerouted south and east drainage ditches to uncontaminated areas beyond the site.

10. The contents of about 480 overpacked drums were taken off-site for proper disposal.

After the contractor completed the extraction and treatment system, they began pumping and treating the contaminated groundwater. Treatment will continue for an indefinite period until a 10^{-6} risk level is achieved. Remaining activities to be completed by the contractor include any periodic adjustments and/or modifications to the constructed remedy to maintain optimum performance. The operations and maintence plan is in draft form and will be finalized soon.

Demonstration of Cleanup Activity-Quality Assurance and Quality Control

Activities at the site were consistent with the ROD, as amended, and all work plans were issued to contractors for design and construction of the RA, including sampling and analysis. The RD Report, including a Quality Assurance Project Plan, incorporated all U.S. EPA and State quality assurance and quality control (QA/QC) procedures and protocol. U.S. EPA analytical methods

were used for all validation and monitoring samples during RA activities. Sampling of soil, sediments, and water followed the U.S. EPA Protocol Test Methods for Evaluation Solid Wastes, Physical/Chemical Methods.

The QA/QC program used throughout the RA was rigorous in conformance with U.S. EPA and state standards; therefore, U.S. EPA and the State determined that all analytical results are accurate to the degree needed to assure satisfactory execution of the RA and are consistent with the ROD and the RD plans and specifications.

Activities and Schedule for site completion

The following activities will be completed according to the following schedule:

Task	Estimated Completion	Responsible Organization
Complete Punch List Items	08/22/95	PRP Contractor
Complete Final Inspection	08/23/95	EPA/State
Approve RA Report	12/15/95	EPA/State/PRPs
Implement O & M Plan	08/23/95	EPA/State
Complete Surface Water Monitoring	indefinite	PRP Contractor
Complete Ground Water Pump & Treat	indefinite	PRP Contractor
Approve Final Close Out Report	indefinite	EPA

Five-Year Review

Upon completion of this remedy, no hazardous substances will remain on-site above levels that prevent unlimited use and unrestricted exposure. However, because this remedy will require greater than five years to achieve these levels, pursuant to CERCLA section 121(c) and as provided in OSWER Directive 9355.7-02, Structure and Components of Five-Year Reviews, May 23, 1991, and OSWER Directive 9355.702A, Supplemental Five-Year Review Guidance, July 26, a five year review will be conducted prior to May 1998 (five years after the award of the RA contract).

Wm. E. Muno

William E. Muno, Acting Director
Waste Management Division

9/18/95
Date

EXPLANATION OF SIGNIFICANT DIFFERENCES II
Summit National
Record of Decision Dated 6-30-88
Record of Decision Amendment Dated 11-2-90
Explanation of Significant Differences I 3-23-92

Subsequent to the signing of the Record of Decision (ROD) Amendment on November 2, 1990, and the March 23, 1992, Explanation of Significant Differences, for the Summit National Superfund site, a change in the Remedial Action selected in the ROD has been proposed. This is a significant change to a component of the remedy. I am hereby approving this change to the ROD and providing public notice of this change in accordance with CERCLA Section 117(c).

Introduction

The Summit National Superfund site is located in Deerfield Township, Portage County, Ohio. A Remedial Investigation and Feasibility Study (RI/FS) was conducted by U.S. Environmental Protection Agency (U.S. EPA) at the site and on June 30, 1988, U.S. EPA issued a ROD that selected the cleanup remedy at the site. The ROD was amended on November 2, 1990. Ohio Environmental Protection Agency (OEPA) reviewed and provided comments on the RI/FS, ROD and ROD amendment as the documents were developed by U.S. EPA. The State of Ohio also concurred on the remedy selected by the ROD as amended.

A Consent Decree (Civil Action No. C81-1961) was entered with the United States District Court for the Northern District of Ohio on June 11, 1991. The construction of the Remedial Action began on June 22, 1993. As a part of the remedy, six groundwater extraction wells were constructed in the intermediate unit and began operation. The volume of water obtained was well below expectations and could not be increased. As a result, the containment of contaminants in this aquifer could not be achieved. Should these contaminants migrate they will move into the Upper Sharon Aquifer. Additional monitoring wells have been installed to monitor this aquifer. The extraction wells have been sealed to prevent any contaminants in the upper aquifer from migrating downward. There are no practical methods to reduce the level of contaminants in the intermediate unit due to the low permeability of this layer.

During the design of the remedy additional tests on the groundwater were completed. Compounds thought to be anomalous were confirmed as present in the groundwater. Because of this the air stripper would not be an effective treatment component. Thus it was replaced by a bioreactor.

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Site History, Contamination Problems, and the Selected Remedy

The Summit National site, a former liquid waste disposal facility, is located on an abandoned coal strip mine at the intersection of Ohio Route 225 and U.S. Route 224 in Deerfield, Ohio; twenty miles west of Youngstown, and forty-five miles southeast of Cleveland. The 11.5 - acre fenced site contains two ponds, an inactive incinerator, and several vacant buildings. Immediately surrounding the site are several rural residences, two landfills, light industries and farmland.

From 1973 to 1978, Summit National accepted liquid wastes including oil, resins, sludge, pesticide wastes and plating wastes in drums and tank trucks. These wastes were stored, incinerated, buried or dumped at the site. In June of 1978, Ohio EPA ordered Summit National to stop receiving waste and to remove all liquid waste stored at the site, and in 1979 filed a complaint against the operations for failing to comply with State regulations regarding the handling of solid and liquid wastes.

Ohio's sampling of on-site soils and surface water indicated the presence of hazardous substances potentially harmful to public health and the environment. In 1980, Ohio EPA constructed a fence around the site, installed a drainage system to control surface water flow onto and off the site and six ground water monitoring wells. The same year, under authority granted in Section 311 of the Clean Water Act, U.S. EPA removed three liquid storage tanks and their contents and some contaminated surface soils from the site. In 1981, an agreement between Ohio and eight of the Potentially Responsible Parties resulted in a $2.5 million surface cleanup which removed drums, tanks, surface debris and a small amount of contaminated soil from the site. In 1983, U.S. EPA placed the site on the National Priorities List, a federal roster of the nation's uncontrolled or abandoned hazardous waste sites eligible for cleanup under the Superfund program. From 1984 through 1987, U.S. EPA conducted a Remedial Investigation (a number of scientific studies conducted to determine the nature and extent of contamination problems) to define and evaluate the alternatives for addressing the existing contamination identified during the Remedial Investigation. U.S. EPA also took some interim measures to control the migration of contaminants off-site and excavated an underground storage tank due to concern that hazardous substances contained in the tank might leak and contaminate the groundwater.

The Remedial Investigation confirmed the presence of contamination on-site in the groundwater, soils, pond sediments and surface water. In addition to on-site contamination, property outside the site perimeters was also found to be contaminated. A variety of organic and inorganic compounds was detected that could potentially threaten human health through direct contact with sediments and soils or ingestion of the groundwater. U.S. EPA developed nine alternatives for correcting and controlling the contamination and evaluated these

alternatives against specific criteria to determine the best solution to the problem. A ROD was signed in June of 1988 specifying the Remedial Action selected for the site. The ROD was amended on November 2, 1990.

The Remedial Action Specified in the ROD, as amended, is:

1. Expanding site boundaries to include contaminated areas along the perimeters and the south drainage ditch and constructing an 8-foot chain link fence around this expanded boundary.

2. Excavating and incinerating (in an on-site facility) soils and sediments as follows:

Contaminated soils on-site:	24,000 c.y.
Contaminated perimeter sediments: (including drainage ditches)	4,000 c.y.
Contents of buried drums	900-1600 drums

3. Dismantling and/or demolishing all on-site structures for on-site disposal.

4. Collecting and treating surface water from two on-site ponds and drainage ditches. Sediments would be excavated after ponds and ditches are dewatered.

5. Extracting groundwater for treatment from the various levels of the water table on-site by two basic components:

   a. A pipe and media drain system along the southern boundary and lower portions of the eastern and western boundaries to extract and treat contaminated groundwater.

   b. Additional extraction wells installed in the intermediate unit to augment the pipe and media drain system.

   All water extracted will be treated by a system to be enclosed in an on-site building.

6. Relocating or removing one vacant residence.

7. Ash from incinerated waste material would be tested to ensure it conforms with U.S. EPA and Ohio EPA standards and used as fill to regrade the site before the final cover is placed over the surface. If the ash fails the test it would either be placed in an on-site RCRA facility or sent to an off-site RCRA landfill.

8. Regrading the site and installing a soil cover over approximately 10.6 acres of site. This cover will consist

of an 18-inch layer of loam and 6 inches of topsoil with gas vents installed for treating and monitoring potential air emissions.

9. Rerouting south and east drainage ditches to uncontaminated areas beyond the site.

Description of the Difference in the ESD and the Basis for the Difference

The ROD, as amended, provided for the installation of six extraction wells in the intermediate unit in order to provide for containment and extraction of contaminants in this unit. There are contaminants in this unit which exceed a hazard quotient of one and an excess cancer risk of 1.0E-6. The extraction wells were installed and pumping of the groundwater began, but the amount of water obtained was an order of magnitude less than expected based on design parameters. The amount of groundwater expected to be pumped was low and with the reduced amount it became apparent that containment could not be achieved, nor was the pumping effective in removing contaminants. The groundwater recovery rate was so low that increasing the number of extraction wells or using alternative technologies would not provide the desired containment or recovery. There was a possibility that some contaminants could migrate downward from the upper aquifer if the pumping continued since this was where the recovered water seemed to originate. In order to prevent this migration, the extraction wells have either been sealed or converted to monitoring wells.

Additional monitoring wells have been installed in the Upper Sharon Aquifer. Any contaminants leaving the intermediate unit would migrate to this unit, and be detected if the concentration was sufficient to present a health risk. The drinking water wells of the nearest residents using groundwater will also be monitored to insure that no contaminants of concern have reached them. Should contaminants from the site be detected in the Upper Sharon aquifer, appropriate measures--such as pumping of this water to the on site treatment plant--will be taken. A decision on the exact nature of the containment and extraction system will be made by U.S. EPA and OEPA if and when contaminants of concern are detected in the Upper Sharon unit.

Attached to and incorporated into the Consent Decree is a Statement of Work (SOW). Appendix D of the SOW, Groundwater Treatment System, specifies in Section 3.1 the components of the groundwater treatment system. These components are:

1) enclosed equalization tank vented through carbon;
2) chemical feed system;
3) enclosed clarification basin vented through carbon;
4) solids dewatering/solids disposal;
5) enclosed media filtration;

6) air stripping vented through carbon; and
7) aqueous granular activated carbon filtration.

During the design of the selected remedy, additional groundwater characterization and groundwater treatability tests were conducted. As determined during the pre-design groundwater treatability study, pretreatment by pH adjustment will substantially remove the iron, manganese and calcium from the groundwater. Therefore, pretreatment by pH adjustment and clarification will be retained in the final groundwater treatment system. Bench-scale coagulation tests, however, did not substantially reduce the solids concentration in the groundwater. Therefore pretreatment by coagulation will not be retained in the final groundwater treatment system.

The investigations also confirmed the presence of acetone and 2-butanone as the primary organic constituents in the groundwater, which were thought to be anomalous during the review of the Remedial Investigation data. The treatability tests showed that air stripping would be very ineffective in removing the acetone and 2-butanone. Since these compounds make up between 85 to 96 percent of the organic volatiles in the groundwater, their lack of removal during the air stripping operation would result in an unusually high treatment load on a final granular activated carbon treatment polishing step. Based on carbon adsorption isotherms developed during the treatability tests, the predicted carbon consumption initially would be expected to be in the range of 6,000 pounds per day. Based on the anticipated high carbon usage if air stripping was used and to ensure that the Best Available Treatment Technology (BATT) is utilized, the following alternative treatment technologies were evaluated:

1) granular activated carbon;
2) aerobic biological treatment;
3) air stripping;
4) steam stripping; and
5) ultraviolet oxidation

These treatment technologies were reviewed for applicability and practicability as related to site conditions, and it was concluded that biological treatment followed by activated carbon polishing would be the most practical and cost-effective BATT for treatment of the contaminated groundwater. Therefore, the revised treatment process will consist of:

1) enclosed equalization/aeration tank with pH adjustment and vented through vapor phase carbon;

2) chemical feed system;

3) enclosed clarification basin vented through vapor phase carbon;

4) bioreactor vented through vapor phase carbon;

5) solids dewatering/solid disposal;

6) enclosed medial filtration; and

7) aqueous granular activated carbon filtration.

Ohio Environmental Protection Agency

The Ohio Environmental Protection Agency concurs with the conversion or closure of the extraction wells and the installation of wells and monitoring of the Upper Sharon Aquifer. OEPA also concurs with the change to the treatment system.

Public Participation Activities

A citizen committee was formed in order to review documents, provide input to U.S. EPA and OEPA, and to assist in providing information to the community. The committee reviewed the information on the extraction and monitoring wells and is in concurrence with the decisions which have been made regarding their use and on the monitoring system.

The citizen committee was formed after the change was made to the treatment plant and was not available to concur on this change.

A copy of the ESD is available for review at the:

U.S. Post Office
1365 Ohio Route 14
Deerfield, Ohio 44411
(216) 584-5901

Hours: 7:30 a.m. to 4:30 p.m.
Monday through Friday

A copy is also available at other repositories in the Deerfield, Ohio area.

Affirmation of Statutory Determinations

Considering the changes in the extraction and monitoring wells and the contingency that has been added to the selected remedy, U.S. EPA believes that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action and is cost-effective.

The remedy selected in the ROD uses permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. The extraction system will continue to function and remove contaminants from the upper aquifer and may remove some contaminants from the intermediate unit. Because of the very slow movement of groundwater in the intermediate unit the contaminants that remain in this unit are not expected to pose a threat to human health or the environment. The change in the treatment system will enable the system to provide better

treatment at a lower cost than the original system. Because the remedy selected in the ROD, as amended, will result in hazardous substances remaining on-site, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Wm. E. Muno
William E. Muno, Acting Director
Waste Management Division

9/18/95
Date